Q. DID YOU RELY ON A SINGLE METHOD TO ESTIMATE THE COST OF EQUITY FOR APS?

A. No. In my opinion, no single method or model should be relied on by itself to determine a utility's cost of common equity because no single approach can be regarded as definitive. Therefore, I applied both the DCF and CAPM methods to estimate the cost of common equity. In my opinion, comparing estimates produced by one method with those produced by other approaches ensures that the estimates of the cost of common equity pass fundamental tests of reasonableness and economic logic.

B. Comparable Risk Proxy Groups

Q. HOW DID YOU IMPLEMENT THESE QUANTITATIVE METHODS TO ESTIMATE THE COST OF COMMON EQUITY FOR APS?

A. Application of the DCF model and other quantitative methods to estimate the cost of common equity requires observable capital market data, such as stock prices. Moreover, even for a firm with publicly traded stock, the cost of common equity can only be estimated. As a result, applying quantitative models using observable market data only produces an estimate that inherently includes some degree of observation error. Thus, the accepted approach to increase confidence in the results is to apply the DCF model and other quantitative methods to a proxy group of publicly traded companies that investors regard as risk-comparable.

Q. WHAT SPECIFIC PROXY GROUP OF UTILITIES DID YOU RELY ON FOR YOUR ANALYSIS?

A. In order to reflect the risks and prospects associated with APS's jurisdictional utility operations, my DCF analyses focused on a reference group of other utilities composed of those companies classified by The Value Line Investment

Survey ("Value Line") as electric utilities with: (1) an S&P corporate credit rating of "BBB-" to "BBB+", (2) a Value Line Safety Rank of "2" or "3", (3) a Value Line Financial Strength Rating of "B" to "B++", and (4) a market capitalization of $1.6 billion or greater. In addition, I eliminated three utilities (FirstEnergy Corp., Northeast Utilities, and Progress Energy, Inc.) that otherwise would have been in the proxy group, but are not appropriate for inclusion because they are currently involved in a major merger or acquisition. These criteria resulted in a proxy group composed of twenty-one companies, which I will refer to as the "Utility Proxy Group."

Q. WHAT OTHER PROXY GROUP DID YOU CONSIDER IN EVALUATING A FAIR ROE FOR APS?

A. Under the regulatory standards established by *Hope* and *Bluefield*, the salient criterion in establishing a meaningful benchmark to evaluate a fair ROE is relative risk, not the particular business activity or degree of regulation. With regulation taking the place of competitive market forces, required returns for utilities should be in line with those of non-utility firms of comparable risk operating under the constraints of free competition. Consistent with this accepted regulatory standard, I also applied the DCF model to a reference group of comparable risk companies in the non-utility sectors of the economy. I refer to this group as the "Non-Utility Proxy Group".

Q. DO UTILITIES HAVE TO COMPETE WITH NON-REGULATED FIRMS FOR CAPITAL?

A. Yes. The cost of capital is an opportunity cost based on the returns that investors could realize by putting their money in other alternatives. Clearly, the total capital invested in utility stocks is only the tip of the iceberg of total common stock investment, and there are a plethora of other enterprises available to investors beyond those in the utility industry. Utilities must compete for capital, not just against firms in their own industry, but with other investment opportunities of comparable risk.

Q. IS IT CONSISTENT WITH THE *BLUEFIELD* AND *HOPE* CASES TO CONSIDER REQUIRED RETURNS FOR NON-UTILITY COMPANIES?

A. Yes. Returns in the competitive sector of the economy form the very underpinning for utility ROEs because regulation purports to serve as a substitute for the actions of competitive markets. The Supreme Court has recognized that it is the degree of risk, not the nature of the business, which is relevant in evaluating an allowed ROE for a utility. The *Bluefield* case refers to "business undertakings attended with comparable risks and uncertainties." [30] It does not restrict consideration to other utilities. Similarly, the *Hope* case states:

> By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.[31]

As in the *Bluefield* decision, there is nothing to restrict "other enterprises" solely to the utility industry.

Indeed, in teaching regulatory policy I usually observe that in the early applications of the comparable earnings approach, utilities were explicitly eliminated due to a concern about circularity. In other words, soon after the *Hope* decision regulatory commissions did not want to get involved in circular logic by looking to the returns of utilities that were established by the same or

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[30] *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).
[31] *Federal Power Comm'n v. Hope Natural Gas Co.* (320 U.S. 391, 1944).

similar regulatory commissions in the same geographic region. To avoid circularity, regulators looked only to the returns of non-utility companies.

Q. DOES CONSIDERATION OF THE RESULTS FOR THE NON-UTILITY PROXY GROUP MAKE THE ESTIMATION OF THE COST OF EQUITY USING THE DCF MODEL MORE RELIABLE?

A. Yes. The estimates of growth from the DCF model depend on analysts' forecasts. It is possible for utility growth rates to be distorted by short-term trends in the industry or the industry falling into favor or disfavor by analysts. The result of such distortions would be to bias the DCF estimates for utilities. For example, Value Line recently observed that near-term growth rates understate the longer-term expectations for gas utilities:

> Natural Gas Utility stocks have fallen near the bottom of our Industry spectrum for Timeliness. Accordingly, short-term investors would probably do best to find a group with better prospects over the coming six to 12 months. Longer-term, we expect these businesses to rebound. An improved economic environment, coupled with stronger pricing, should boost results across this sector over the coming years.[32]

Because the Non-Utility Proxy Group includes low risk companies from many industries, it diversifies away any distortion that may be caused by the ebb and flow of enthusiasm for a particular sector.

Q. WHAT CRITERIA DID YOU APPLY TO DEVELOP THE NON-UTILITY PROXY GROUP?

A. My comparable risk proxy group of non-utility firms was composed of those U.S. companies followed by Value Line that: (1) pay common dividends; (2) have a Safety Rank of "1"; (3) have a Financial Strength Rating of "B++" or

[32] The Value Line Investment Survey at 445 (Mar. 12, 2010).

greater; (4) have a beta of 0.85 or less; and, (5) have investment grade credit ratings from S&P.

Q. DO THESE CRITERIA PROVIDE OBJECTIVE EVIDENCE TO EVALUATE INVESTORS' RISK PERCEPTIONS?

A. Yes. Credit ratings are assigned by independent rating agencies for the purpose of providing investors with a broad assessment of the creditworthiness of a firm. Ratings generally extend from triple-A (the highest) to D (in default). Other symbols (*e.g.*, "A+") are used to show relative standing within a category. Because the rating agencies' evaluation includes virtually all of the factors normally considered important in assessing a firm's relative credit standing, corporate credit ratings provide a broad, objective measure of overall investment risk that is readily available to investors. Although the credit rating agencies are not immune to criticism, their rankings and analyses are widely cited in the investment community and referenced by investors.[33] Investment restrictions tied to credit ratings continue to influence capital flows, and credit ratings are also frequently used as a primary risk indicator in establishing proxy groups to estimate the cost of common equity.

While credit ratings provide the most widely referenced benchmark for investment risks, other quality rankings published by investment advisory services also provide relative assessments of risks that are considered by investors in forming their expectations for common stocks. Value Line's primary risk indicator is its Safety Rank, which ranges from "1" (Safest) to "5" (Riskiest). This overall risk measure is intended to capture the total risk of a

[33] While the ratings agencies were faulted during the financial crisis for failing to adequately assess the risk associated with structured finance products, investors continue to regard corporate credit ratings as a reliable guide to investment risks.

stock, and incorporates elements of stock price stability and financial strength. Given that Value Line is perhaps the most widely available source of investment advisory information, its Safety Rank provides useful guidance regarding the risk perceptions of investors.

The Financial Strength Rating is designed as a guide to overall financial strength and creditworthiness, with the key inputs including financial leverage, business volatility measures, and company size. Value Line's Financial Strength Ratings range from "A++" (strongest) down to "C" (weakest) in nine steps. Finally, Value Line's beta measures the volatility of a security's price relative to the market as a whole. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00.

Q. HOW DO THE OVERALL RISKS OF YOUR PROXY GROUPS COMPARE WITH APS?

A. Table WEA-2 compares the Utility Proxy Group with the Non-Utility Proxy Group and APS across four key indicators of investment risk. Because the Company does not have publicly traded common stock, the Value Line risk measures shown reflect those published for the Company's parent, Pinnacle West:

TABLE WEA-2
COMPARISON OF RISK INDICATORS

	S&P Credit Rating	Value Line Safety Rank	Value Line Financial Strength	Value Line Beta
Utility Group	BBB	3	B+	0.74
Non-Utility Proxy Group	A	1	A+	0.70
APS	BBB-	3	B+	0.70

Q. DO THESE COMPARISONS INDICATE THAT INVESTORS WOULD VIEW THE FIRMS IN YOUR PROXY GROUPS AS RISK-COMPARABLE TO THE COMPANY?

A. Yes. As discussed earlier, APS is assigned a corporate credit rating of "BBB-" by S&P, which falls below the average corporate credit rating for the Utility Proxy Group. Meanwhile, the average Value Line Safety Rank and Financial Strength Rating for the Utility Proxy Group are identical to the values assigned to the Company's parent, while the average beta value for the Utility Proxy Group suggests somewhat greater risk than investors would associate with APS. Considered together, a comparison of these objective measures, which consider of a broad spectrum of risks, including financial and business position, and exposure to firm-specific factors, indicates that investors would likely conclude that the overall investment risks for APS are comparable to, or greater than, those of the firms in the Utility Proxy Group.

With respect to the Non-Utility Proxy Group, its average credit ratings, Safety Rank, and Financial Strength Rating suggest less risk than for APS, with its 0.70 average beta indicating identical risk. While the impact of differences in regulation is reflected in objective risk measures, my analyses conservatively focus on a lower-risk group of non-utility firms.

C. Discounted Cash Flow Analyses

Q. HOW IS THE DCF MODEL USED TO ESTIMATE THE COST OF EQUITY?

A. DCF models attempt to replicate the market valuation process that sets the price investors are willing to pay for a share of a company's stock. The model rests on the assumption that investors evaluate the risks and expected rates of return from all securities in the capital markets. Given these expectations, the price of each stock is adjusted by the market until investors are adequately compensated for the risks they bear. Therefore, we can look to the market to determine what investors believe a share of common stock is worth. By estimating the cash flows investors expect to receive from the stock in the way of future dividends and capital gains, we can calculate their required rate of return. In other words, the cash flows that investors expect from a stock are estimated, and given its current market price, we can "back-into" the discount rate, or cost of equity, that investors implicitly used in bidding the stock to that price. Notationally, the general form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \cdots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

where: P_0 = Current price per share;
P_t = Expected future price per share in period t;
D_t = Expected dividend per share in period t;
k_e = Cost of equity.

That is, the cost of equity is the discount rate that will equate the current price of a share of stock with the present value of all expected cash flows from the stock.

Q. WHAT FORM OF THE DCF MODEL IS CUSTOMARILY USED TO ESTIMATE THE COST OF EQUITY IN RATE CASES?

A. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[34]

$$P_0 = \frac{D_1}{k_e - g}$$

where: g = Investors' long-term growth expectations.

The cost of equity (k_e) can be isolated by rearranging terms within the equation:

$$k_e = \frac{D_1}{P_0} + g$$

This constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: 1) dividend yield (D_1/P_0); and 2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

Q. WHAT FORM OF THE DCF MODEL DID YOU USE?

A. I applied the constant growth DCF model to estimate the cost of equity for APS, which is the form of the model most commonly relied on to establish the cost of equity for traditional regulated utilities and the method most often referenced by regulators. Other forms of the general, or non-constant DCF model, such as "two-stage" or "multi-stage" analyses can be used to estimate the cost of equity.

[34] The constant growth DCF model is dependent on a number of strict assumptions, which in practice are never strictly met. These include a constant growth rate for both dividends and earnings; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and all of the above extend to infinity.

However, these approaches generally require several very specific assumptions regarding investors' expected cash flows that must occur at given points in the future. This makes the results of non-constant growth DCF applications sensitive to changes in assumptions, and therefore subject to greater controversy in a rate case setting.

While the complexity of non-constant DCF models may impart an aura of accuracy, there is no evidence that investors' current view of electric utilities anticipates a series of discrete, clearly defined stages. As a result, there is no discernable transition that would support use of the multi-stage DCF approach to evaluate a fair rate of return for APS. Moreover, to the extent that each of these time-specific suppositions about future cash flows do not reflect what real-world investors actually anticipate, the resulting cost of equity estimate will be biased. Indeed, the benchmark for growth in a DCF model is <u>what investors expect</u> when they purchase stock. Unless we replicate investors' thinking, we cannot uncover their required returns and thus the market cost of equity. In practice, applying a non-constant DCF model would lead to error if it ignores the views of real-world investors.

Q. **HOW IS THE CONSTANT GROWTH FORM OF THE DCF MODEL TYPICALLY USED TO ESTIMATE THE COST OF EQUITY?**

A. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0) for the firm in question. This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock. The second, and more controversial, step is to estimate investors' long-term growth expectations (*g*) for the firm. The final step is to sum the firm's dividend yield and estimated growth rate to arrive at an estimate of its cost of equity.

Q. HOW WAS THE DIVIDEND YIELD FOR THE UTILITY PROXY GROUP DETERMINED?

A. Estimates of dividends to be paid by each of these utilities over the next twelve months, obtained from Value Line, served as D_1. This annual dividend was then divided by the corresponding stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock prices, and resulting dividend yields for the firms in the utility proxy group are presented on Attachment WEA-2. As shown there, dividend yields for the firms in the Utility Proxy Group ranged from 2.1 percent to 5.9 percent.

Q. WHAT IS THE NEXT STEP IN APPLYING THE CONSTANT GROWTH DCF MODEL?

A. The next step is to evaluate long-term growth expectations, or "*g*", for the firm in question. In constant growth DCF theory, earnings, dividends, book value, and market price are all assumed to grow in lockstep, and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an attempt to replicate the mechanism investors used to arrive at observable stock prices. A wide variety of techniques can be used to derive growth rates, but the only "*g*" that matters in applying the DCF model is the value that investors expect.

Q. ARE HISTORICAL GROWTH RATES LIKELY TO BE REPRESENTATIVE OF INVESTORS' EXPECTATIONS FOR ELECTRIC UTILITIES?

A. No. If past trends in earnings, dividends, and book value are to be representative of investors' expectations for the future, then the historical conditions giving rise to these growth rates should be expected to continue. That is clearly not the case for electric utilities, where structural and industry changes have led to declining growth in dividends, earnings pressure, and, in many cases, significant write-offs. While these conditions serve to depress historical growth measures, they are not representative of long-term expectations for the electric utility industry or the expectations that investors have incorporated into current market prices. As a result, historical growth measures for utilities do not currently meet the requirements of the DCF model.

Q. WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN DEVELOPING THEIR LONG-TERM GROWTH EXPECTATIONS?

A. While the DCF model is technically concerned with growth in dividend cash flows, implementation of this DCF model is solely concerned with replicating the forward-looking evaluation of real-world investors. In the case of electric utilities, dividend growth rates are not likely to provide a meaningful guide to investors' current growth expectations. This is because utilities have significantly altered their dividend policies in response to more accentuated business risks in the industry.[35] As a result of this trend towards a more conservative payout ratio, dividend growth in the utility industry has remained largely stagnant as utilities conserve financial resources to provide a hedge against heightened uncertainties.

As payout ratios for firms in the electric utility industry trended downward, investors' focus has increasingly shifted from dividends to earnings as a measure of long-term growth. Future trends in earnings, which provide the

[35] For example, the payout ratio for electric utilities fell from approximately 80% historically to on the order of 60%. The Value Line Investment Survey (Sep. 15, 1995 at 161, Feb. 4, 2011 at 2237).

source for future dividends and ultimately support share prices, play a pivotal role in determining investors' long-term growth expectations. The importance of earnings in evaluating investors' expectations and requirements is well accepted in the investment community. As noted in *Finding Reality in Reported Earnings* published by the Association for Investment Management and Research:

> [E]arnings, presumably, are the basis for the investment benefits that we all seek. "Healthy earnings equal healthy investment benefits" seems a logical equation, but earnings are also a scorecard by which we compare companies, a filter through which we assess management, and a crystal ball in which we try to foretell future performance.[36]

Value Line's near-term projections and its Timeliness Rank, which is the principal investment rating assigned to each individual stock, are also based primarily on various quantitative analyses of earnings. As Value Line explained:

> The future earnings rank accounts for 65% in the determination of relative price change in the future; the other two variables (current earnings rank and current price rank) explain 35%.[37]

The fact that investment advisory services focus on growth in earnings indicates that the investment community regards this as a superior indicator of future long-term growth. Indeed, "A Study of Financial Analysts: Practice and Theory," published in the *Financial Analysts Journal*, reported the results of a survey conducted to determine what analytical techniques investment analysts

[36] Association for Investment Management and Research, "Finding Reality in Reported Earnings: An Overview", p. 1 (Dec. 4, 1996).
[37] The Value Line Investment Survey, *Subscriber's Guide*, p. 53.

actually use.[38] Respondents were asked to rank the relative importance of earnings, dividends, cash flow, and book value in analyzing securities. Of the 297 analysts that responded, only 3 ranked dividends first while 276 ranked it last. The article concluded:

> Earnings and cash flow are considered far more important than book value and dividends.[39]

More recently, the *Financial Analysts Journal* reported the results of a study of the relationship between valuations based on alternative multiples and actual market prices, which concluded, "In all cases studied, earnings dominated operating cash flows and dividends."[40]

Q. DO THE GROWTH RATE PROJECTIONS OF SECURITY ANALYSTS CONSIDER HISTORICAL TRENDS?

A. Yes. Professional security analysts study historical trends extensively in developing their projections of future earnings. Hence, to the extent there is any useful information in historical patterns, that information is incorporated into analysts' growth forecasts.

Q. WHAT ARE SECURITY ANALYSTS CURRENTLY PROJECTING IN THE WAY OF GROWTH FOR THE FIRMS IN THE UTILITY PROXY GROUP?

A. The earnings growth projections for each of the firms in the Utility Proxy Group reported by Value Line, Thomson Reuters ("IBES"), and Zacks Investment Research ("Zacks") are displayed on Attachment WEA-2.[41]

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[38] Block, Stanley B., "A Study of Financial Analysts: Practice and Theory", *Financial Analysts Journal* (July/August 1999).
[39] *Id.* at 88.
[40] Liu, Jing, Nissim, Doron, & Thomas, Jacob, "Is Cash Flow King in Valuations?," *Financial Analysts Journal*, Vol. 63, No. 2 (March/April 2007) at 56.
[41] Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by Thomson Reuters.

Q. SOME ARGUE THAT ANALYSTS' ASSESSMENTS OF GROWTH RATES ARE BIASED. DO YOU BELIEVE THESE PROJECTIONS ARE INAPPROPRIATE FOR ESTIMATING INVESTORS' REQUIRED RETURN USING THE DCF MODEL?

A. No. In applying the DCF model to estimate the cost of common equity, the only relevant growth rate is the forward-looking expectations of investors that are captured in current stock prices. Investors, just like securities analysts and others in the investment community, do not know how the future will actually turn out. They can only make investment decisions based on their best estimate of what the future holds in the way of long-term growth for a particular stock, and securities prices are constantly adjusting to reflect their assessment of available information.

Any claims that analysts' estimates are not relied upon by investors are illogical given the reality of a competitive market for investment advice. If financial analysts' forecasts do not add value to investors' decision making, then it is irrational for investors to pay for these estimates. Similarly, those financial analysts who fail to provide reliable forecasts will lose out in competitive markets relative to those analysts whose forecasts investors find more credible. The reality that analyst estimates are routinely referenced in the financial media and in investment advisory publications (e.g., Value Line) implies that investors use them as a basis for their expectations.

The continued success of investment services such as Thompson Reuters and Value Line, and the fact that projected growth rates from such sources are widely referenced, provides strong evidence that investors give considerable weight to analysts' earnings projections in forming their expectations for future growth. While the projections of securities analysts may be proven optimistic or pessimistic in hindsight, this is irrelevant in assessing the expected growth that investors have incorporated into current stock prices, and any bias in analysts' forecasts – whether pessimistic or optimistic – is similarly irrelevant if investors share the analysts' views. Earnings growth projections of security analysts provide the most frequently referenced guide to investors' views and are widely accepted in applying the DCF model. As explained in *New Regulatory Finance*:

> Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of *g* [growth]. The accuracy of these forecasts in the sense of whether they turn out to be correct is not an issue here, as long as they reflect widely held expectations.[42]

Q. HOW ELSE ARE INVESTORS' EXPECTATIONS OF FUTURE LONG-TERM GROWTH PROSPECTS OFTEN ESTIMATED WHEN APPLYING THE CONSTANT GROWTH DCF MODEL?

A. In constant growth theory, growth in book equity will be equal to the product of the earnings retention ratio (one minus the dividend payout ratio) and the earned rate of return on book equity. Furthermore, if the earned rate of return and the payout ratio are constant over time, growth in earnings and dividends will be equal to growth in book value. Despite the fact that these conditions are seldom, if ever, met in practice, this "sustainable growth" approach may provide a rough guide for evaluating a firm's growth prospects and is frequently proposed in regulatory proceedings.

[42] Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.* at 298 (2006).

Accordingly, while I believe that analysts' forecasts provide a superior and more direct guide to investors' growth expectations, I have included the "sustainable growth" approach for completeness. The sustainable growth rate is calculated by the formula, $g = br+sv$, where "b" is the expected retention ratio, "r" is the expected earned return on equity, "s" is the percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion rate.

Q. WHAT IS THE PURPOSE OF THE "SV" TERM?

A. Under DCF theory, the "sv" factor is a component of the growth rate designed to capture the impact of issuing new common stock at a price above, or below, book value. When a company's stock price is greater than its book value per share, the per-share contribution in excess of book value associated with new stock issues will accrue to the current shareholders. This increase to the book value of existing shareholders leads to higher expected earnings and dividends, with the "sv" factor incorporating this additional growth component.

Q. WHAT GROWTH RATE DOES THE EARNINGS RETENTION METHOD SUGGEST FOR THE UTILITY PROXY GROUP?

A. The sustainable, "br+sv" growth rates for each firm in the proxy group are summarized on Attachment WEA-2, with the underlying details being presented on Attachment WEA-3. For each firm, the expected retention ratio (b) was calculated based on Value Line's projected dividends and earnings per share. Likewise, each firm's expected earned rate of return (r) was computed by dividing projected earnings per share by projected net book value. Because Value Line reports end-of-year book values, an adjustment was incorporated to compute an average rate of return over the year, consistent with the theory underlying this approach to estimating investors' growth expectations.

Meanwhile, the percent of common equity expected to be issued annually as new common stock (s) was equal to the product of the projected market-to-book ratio and growth in common shares outstanding, while the equity accretion rate (v) was computed as 1 minus the inverse of the projected market-to-book ratio.

Q. WHAT COST OF EQUITY ESTIMATES WERE IMPLIED FOR THE UTILITY PROXY GROUP USING THE DCF MODEL?

A. After combining the dividend yields and respective growth projections for each utility, the resulting cost of equity estimates are shown on Attachment WEA-2.

Q. IN EVALUATING THE RESULTS OF THE CONSTANT GROWTH DCF MODEL, IS IT APPROPRIATE TO ELIMINATE ESTIMATES THAT ARE EXTREME LOW OR HIGH OUTLIERS?

A. Yes. In applying quantitative methods to estimate the cost of equity, it is essential that the resulting values pass fundamental tests of reasonableness and economic logic. Accordingly, DCF estimates that are implausibly low or high should be eliminated when evaluating the results of this method.

Q. HOW DID YOU EVALUATE DCF ESTIMATES AT THE LOW END OF THE RANGE?

A. It is a basic economic principle that investors can be induced to hold more risky assets only if they expect to earn a return to compensate them for their risk bearing. As a result, the rate of return that investors require from a utility's common stock, the most junior and riskiest of its securities, must be considerably higher than the yield offered by senior, long-term debt. Consistent with this principle, the DCF results must be adjusted to eliminate estimates that are determined to be extreme low outliers when compared against the yields available to investors from less risky utility bonds.

Q. WHAT DOES THIS TEST OF LOGIC IMPLY WITH RESPECT TO THE DCF RESULTS FOR THE UTILITY PROXY GROUP?

A. As noted earlier, the average S&P corporate credit rating for the Utility proxy Group is "BBB", with APS being rated "BBB-". Companies rated "BBB-", "BBB", and "BBB+" are all considered part of the triple-B rating category, with Moody's monthly yields on triple-B bonds averaging approximately 6.0 percent in March 2011.[43] It is inconceivable that investors are not requiring a substantially higher rate of return for holding common stock. Consistent with this principle, the DCF results for the Utility Proxy Group must be adjusted to eliminate estimates that are determined to be extreme low outliers when compared against the yields available to investors from less risky utility bonds.

Q. HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?

A. Yes. FERC has noted that adjustments are justified where applications of the DCF approach produce illogical results. FERC evaluates DCF results against observable yields on long-term public utility debt and has recognized that it is appropriate to eliminate estimates that do not sufficiently exceed this threshold. In a 2002 opinion establishing its current precedent for determining ROEs for electric utilities, for example, FERC noted:

> An adjustment to this data is appropriate in the case of PG&E's low-end return of 8.42 percent, which is comparable to the average Moody's "A" grade public utility bond yield of 8.06 percent, for October 1999. Because investors cannot be expected to purchase stock if debt, which has less risk than stock, yields essentially the same return, this low-end return cannot be considered reliable in this case.[44]

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[43] Moody's Investors Service, www.credittrends.com.

[44] *Southern California Edison Company*, 92 FERC ¶ 61,070 at p. 22 (2000).

Similarly, in its August 2006 decision in *Kern River Gas Transmission Company*, FERC noted that:

> [T]he 7.31 and 7.32 percent costs of equity for El Paso and Williams found by the ALJ are only 110 and 122 basis points above that average yield for public utility debt.[45]

The Commission upheld the opinion of Staff and the Administrative Law Judge that cost of equity estimates for these two proxy group companies "were too low to be credible."[46]

The practice of eliminating low-end outliers has been affirmed in numerous FERC proceedings,[47] and in its April 15, 2010 decision in *SoCal Edison*, FERC affirmed that, "it is reasonable to exclude any company whose low-end ROE fails to exceed the average bond yield by about 100 basis points or more."[48]

Q. WHAT ELSE SHOULD BE CONSIDERED IN EVALUATING DCF ESTIMATES AT THE LOW END OF THE RANGE?

A. As indicated earlier, while corporate bond yields have declined substantially as the worst of the financial crisis has abated, it is generally expected that long-term interest rates will rise as the recession ends and the economy returns to a more normal pattern of growth. As shown in Table WEA-3 below, forecasts of IHS Global Insight and the EIA imply an average triple-B bond yield of 7.16 percent over the period 2012-2015:

[45] *Kern River Gas Transmission Company*, Opinion No. 486, 117 FERC ¶ 61,077 at P 140 & n. 227 (2006).
[46] *Id.*
[47] *See, e.g., Virginia Electric Power Co.*, 123 FERC ¶ 61,098 at P 64 (2008).
[48] *Southern California Edison Co.*, 131 FERC ¶ 61,020 at P 55 (2010) ("*SoCal Edison*").

TABLE WEA-3
IMPLIED BBB BOND YIELD

	2012-15
Projected AA Utility Yield	
IHS Global Insight (a)	6.33%
EIA (b)	6.58%
Average	6.45%
Current BBB - AA Yield Spread (c)	0.71%
Implied Triple-B Utility Yield	**7.16%**

(a) IHS Global Insight, *U.S. Economic Outlook* at 19 (Feb. 2011).
(b) Energy Information Administration, *Annual Energy Outlook 2011 Early Release* (Dec. 16, 2010).
(c) Based on monthly average bond yields for the six-month period Oct. 2010 - Mar. 2011.

The increase in debt yields anticipated by IHS Global Insight and EIA is also supported by the widely-referenced Blue Chip Financial Forecasts, which projects that yields on corporate bonds will climb more than 100 basis points through the period 2012-2016.[49]

Q. WHAT DOES THIS TEST OF LOGIC IMPLY WITH RESPECT TO THE DCF RESULTS FOR THE UTILITY PROXY GROUP?

A. As shown on Attachment WEA-2, eight low-end DCF estimates ranged from 0.7 percent to 6.5 percent. Five of these values were below current utility bond yields, with cost of equity estimates below 7.0 percent being less than the yield on triple-B utility bonds expected during the period 2012-2015. In light of the risk-return tradeoff principle and the test applied in *SoCal Edison*, it is inconceivable that investors are not requiring a substantially higher rate of return for holding common stock, which is the riskiest of a utility's securities. As a result, consistent with the test of economic logic applied by FERC and the

[49] *Blue Chip Financial Forecasts*, Vol. 29, No. 12 (Dec. 1, 2010) & Vol. 30, No. 3 (Mar. 1, 2011).

upward trend expected for utility bond yields, these values provide little guidance as to the returns investors require from utility common stocks and should be excluded.

Q. DO YOU ALSO RECOMMEND EXCLUDING ESTIMATES AT THE HIGH END OF THE RANGE OF DCF RESULTS?

A. Yes. The upper end of the cost of common equity range produced by the DCF analysis presented in Attachment WEA-2 was set by estimates of 18.8 percent and 17.1 percent for ITC Holdings Corp. I determined that, when compared with the balance of the remaining estimates, these values should be excluded in evaluating the results of the DCF model for the Utility Proxy Group. This is also consistent with the precedent adopted by FERC, which has established that estimates found to be "extreme outliers" should be disregarded in interpreting the results of the DCF model.[50]

Q. WHAT COST OF COMMON EQUITY ESTIMATES ARE IMPLIED BY YOUR DCF RESULTS FOR THE UTILITY PROXY GROUP?

A. As shown on Attachment WEA-2 and summarized in Table WEA-4, below, after eliminating illogical low- and high-end values, application of the constant growth DCF model resulted in cost of common equity estimates ranging from 9.3 percent to 11.40 percent:

[50] See, *e.g.*, *ISO New England, Inc.*, 109 FERC ¶ 61,147 at P 205 (2004).

TABLE WEA-4
DCF RESULTS –UTILITY PROXY GROUP

Growth Rate	Average Cost of Equity
Value Line	11.2%
IBES	11.0%
Zacks	10.9%
br+sv	9.5%

Q. WHAT WERE THE RESULTS OF YOUR DCF ANALYSIS FOR THE NON-UTILITY PROXY GROUP?

A. I applied the DCF model to the Non-Utility Proxy Group in exactly the same manner described earlier for the proxy group of utilities. The results of my DCF analysis for the Non-Utility Proxy Group are presented in Attachment WEA-4, with the sustainable, "br+sv" growth rates being developed on Attachment WEA-5. As shown on Attachment WEA-4 and summarized in Table WEA-5, below, after eliminating illogical low- and high-end values, application of the constant growth DCF model resulted in cost of common equity estimates on the order of at least 12 percent:

TABLE WEA-5
DCF RESULTS – NON-UTILITY PROXY GROUP

Growth Rate	Average Cost of Equity
Value Line	11.9%
IBES	12.4%
Zacks	12.5%
br+sv	12.1%

Q. DO THE HIGHER DCF ESTIMATES FOR THE NON-UTILITY PROXY GROUP DEMONSTRATE THAT THE RISKS OF THESE COMPANIES ARE GREATER THAN APS?

A. No. While we are accustomed to associating higher risk with higher returns, DCF estimates of investors' required rate of return do not always produce that result. Performing the DCF calculations for the Non-Utility Proxy Group produced ROE estimates that are higher than the DCF estimates for the Utility Proxy Group, even though the risks that investors associate with the group of non-utility firms - as measured by S&P's credit ratings and Value Line's Safety Rank, Financial Strength, and Beta – are lower than the risks investors associate with the Utility Proxy Group and APS. The actual cost of equity is unobservable, and DCF estimates may depart from these values because investors' expectations may not be captured by the inputs to the ROE model, particularly the assumed growth rate. Nevertheless, regulators have relied upon DCF calculations for years in evaluating a fair ROE. The divergence between the DCF estimates for the Utility and Non-Utility Proxy Groups suggests that both should be considered to ensure a balanced end-result.

D. Capital Asset Pricing Model

Q. PLEASE DESCRIBE THE CAPM.

A. The CAPM is generally considered to be the most widely referenced method for estimating the cost of equity both among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient. Assuming investors are fully diversified, the relevant risk of an individual asset (*e.g.*, common stock) is its volatility relative to the market as a whole, with beta reflecting the tendency of a stock's price to follow changes in the market. The CAPM is mathematically expressed as

$$R_j = R_f + \beta_j(R_m - R_f)$$

where:
R_j = required rate of return for stock j;
R_f = risk-free rate;
R_m = expected return on the market portfolio; and,
β_j = beta, or systematic risk, for stock j.

Like the DCF model, the CAPM is an *ex-ante,* or forward-looking model based on expectations of the future. As a result, in order to produce a meaningful estimate of investors' required rate of return, the CAPM must be applied using estimates that reflect the expectations of actual investors in the market, not with backward-looking, historical data.

Q. HOW DID YOU APPLY THE CAPM TO ESTIMATE THE COST OF EQUITY?

A. Application of the CAPM to the Utility Proxy Group based on a forward-looking estimate for investors' required rate of return from common stocks is presented on Attachment WEA-6. In order to capture the expectations of today's investors in current capital markets, the expected market rate of return was estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500 Composite Index.

The dividend yield for each firm was calculated based on the annual indicated dividend payment obtained from Value Line, increased by one-years' growth using the rate discussed subsequently (1 + *g*) to convert them to year-ahead dividend yields presumed by the constant growth DCF model. The growth rate was equal to the consensus earnings growth projections for each firm published by IBES, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. Based on the weighted average of the projections for the 354 individual firms, current estimates imply an average growth rate over the next five years of 10.5 percent. Combining this average growth rate with a year-ahead dividend yield of 2.3 percent results in a current cost of common equity estimate for the market as a whole (R_m) of approximately 12.8 percent. Subtracting a 4.5 percent risk-free rate based on the average yield on 30-year Treasury bonds produced a market equity risk premium of 8.3 percent.

Q. WHAT WAS THE SOURCE OF THE BETA VALUES YOU USED TO APPLY THE CAPM?

A. I relied on the beta values reported by Value Line, which in my experience is the most widely referenced source for beta in regulatory proceedings. As noted in *New Regulatory Finance*:

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. ... Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[51]

Q. WHAT ELSE SHOULD BE CONSIDERED IN APPLYING THE CAPM?

A. A. As explained by *Morningstar*:

> One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones.[52]

Because empirical research indicates that the CAPM does not fully account for observed differences in rates of return attributable to firm size, a modification is required to account for this size effect.

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[51] Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports* at 71 (2006).
[52] *Morningstar*, "Ibbotson SBBI 2010 Valuation Yearbook," at p. 85 (footnote omitted).

According to the CAPM, the expected return on a security should consist of the riskless rate, plus a premium to compensate for the systematic risk of the particular security. The degree of systematic risk is represented by the beta coefficient. The need for the size adjustment arises because differences in investors' required rates of return that are related to firm size are not fully captured by beta. To account for this, Morningstar has developed size premiums that need to be added to the theoretical CAPM cost of equity estimates to account for the level of a firm's market capitalization in determining the CAPM cost of equity.[53] Accordingly, my CAPM analyses incorporated an adjustment to recognize the impact of size distinctions, as measured by the average market capitalization for the respective proxy groups.

Q. WHAT COST OF EQUITY ESTIMATE WAS INDICATED FOR THE UTILITY PROXY GROUP BASED ON THIS FORWARD-LOOKING APPLICATION OF THE CAPM?

A. The average market capitalization of the Utility Proxy Group is $6.3 billion. Based on data from *Morningstar*, this means that the theoretical CAPM cost of equity estimate must be increased by 74 basis points to account for the industry group's relative size. As shown on Attachment WEA-6, adjusting the theoretical CAPM result to incorporate this size adjustment results in an average indicated cost of common equity of 11.40 percent.

Q. WHAT COST OF COMMON EQUITY WAS INDICATED FOR THE NON-UTILITY PROXY GROUP BASED ON THIS FORWARD-LOOKING APPLICATION OF THE CAPM?

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[53] *Id.* at Table C-1.

A. As shown on Attachment WEA-7, applying the forward-looking CAPM approach to the firms in the Non-Utility Proxy Group results in an average implied cost of common equity of 10.0 percent.

Q. SHOULD THE CAPM APPROACH BE APPLIED USING HISTORICAL RATES OF RETURN?

A. No. The CAPM cost of common equity estimate is calibrated from investors' required risk premium between Treasury bonds and common stocks. In response to heightened uncertainties, investors have repeatedly sought a safe haven in U.S. government bonds and this "flight to safety" has pushed Treasury yields significantly lower while yield spreads for corporate debt have widened. This distortion not only impacts the absolute level of the CAPM cost of equity estimate, but it affects estimated risk premiums. Economic logic would suggest that investors' required risk premium for common stocks over Treasury bonds has also increased.

Meanwhile, backward-looking approaches incorrectly assume that investors' assessment of the required risk premium between Treasury bonds and common stocks is constant, and equal to some historical average. At no time in recent history has the fallacy of this assumption been demonstrated more concretely than it is today. This incongruity between investors' current expectations and historical risk premiums is particularly relevant during periods of heightened uncertainty and rapidly changing capital market conditions, such as those experienced recently.[54]

E. Flotation Costs

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[54] FERC has previously rejected CAPM methodologies based on historical data because whatever historical relationships existed between debt and equity securities may no longer hold. *See Orange & Rockland Utils., Inc., 40 F.E.R.C. P63,053, at pp. 65,208 -09 (1987), aff'd, Opinion No. 314, 44 F.E.R.C. P61,253 at 65,208.*

Q. WHAT OTHER CONSIDERATIONS ARE RELEVANT IN DETERMINING THE ROE FOR APS?

A. The common equity used to finance the investment in utility assets is provided from either the sale of stock in the capital markets or from retained earnings not paid out as dividends. When equity is raised through the sale of common stock, there are costs associated with "floating" the new equity securities. These flotation costs include services such as legal, accounting, and printing, as well as the fees and discounts paid to compensate brokers for selling the stock to the public. Also, some argue that the "market pressure" from the additional supply of common stock and other market factors may further reduce the amount of funds that a utility nets when it issues common equity.

Q. IS THERE AN ESTABLISHED MECHANISM FOR A UTILITY TO RECOGNIZE EQUITY ISSUANCE COSTS?

A. No. While debt flotation costs are recorded on the books of the utility, amortized over the life of the issue, and thus increase the effective cost of debt capital, there is no similar accounting treatment to ensure that equity flotation costs are recorded and ultimately recognized. Alternatively, no rate of return is authorized on flotation costs necessarily incurred to obtain a portion of the equity capital used to finance plant. In other words, equity flotation costs are not included in a utility's rate base because neither that portion of the gross proceeds from the sale of common stock used to pay flotation costs is available to invest in plant and equipment, nor are flotation costs capitalized as an intangible asset. Unless some provision is made to recognize these issuance costs, a utility's revenue requirements will not fully reflect all of the costs incurred for the use of investors' funds. Because there is no accounting convention to accumulate the flotation costs associated with equity issues, they must be accounted for indirectly, with an upward adjustment to the cost of common equity being the most logical mechanism.

Q. HAS PINNACLE WEST RECENTLY ISSUED ADDITIONAL COMMON EQUITY?

A. Yes. Pinnacle West closed on the sale of 6.9 million shares of common stock in April 2010, with the net proceeds raising approximately $252.8 million of additional equity capital. Pinnacle West contributed all of the net proceeds from this common stock offering into APS in the form of equity infusions.[55] Thus, in addition to flotation costs associated with past equity issues, APS also incurred issuance costs associated with Pinnacle West's recent sale of new common shares.

Q. WHAT IS THE MAGNITUDE OF THE ADJUSTMENT TO THE "BARE BONES" COST OF COMMON EQUITY TO ACCOUNT FOR ISSUANCE COSTS?

A. While there are a number of ways in which a flotation cost adjustment can be calculated, one of the most common methods used to account for flotation costs in regulatory proceedings is to apply an average flotation-cost percentage to a utility's dividend yield. Based on a review of the finance literature, *New Regulatory Finance* concluded:

> The flotation cost allowance requires an estimated adjustment to the return on equity of approximately 5% to 10%, depending on the size and risk of the issue.[56]

Alternatively, a study of data from Morgan Stanley regarding issuance costs associated with utility common stock issuances suggests an average flotation

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[55] Pinnacle West Capital Corporation, *2010 Form 10-K Report* at 51.
[56] Roger A. Morin, "New Regulatory Finance," *Public Utilities Reports, Inc.* at 323 (2006).

cost percentage of 3.6 percent,[57] with Pinnacle West incurring issuance costs equal to 3.57 percent of the gross proceeds from its April 2010 public offering.

Issuance costs are a legitimate consideration in setting the ROE for a utility, and applying these expense percentages to a representative dividend yield for a utility of 4.5 percent implies a flotation cost adjustment on the order of 15 to 45 basis points.

IV. RETURN ON EQUITY FOR APS

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. In addition to presenting the conclusions of my evaluation of a fair ROE for APS, this section also discusses the relationship between ROE and preservation of a utility's financial integrity and the ability to attract capital. In addition, I evaluate the reasonableness of APS's requested capital structure.

A. Implications for Financial Integrity

Q. WHY IS IT IMPORTANT TO ALLOW APS AN ADEQUATE RETURN ON FAIR VALUE RATE BASE?

A. Given the importance of the utility industry to the economy and society, it is essential to maintain reliable and economical service to all consumers. While APS remains committed to deliver reliable service, a utility's ability to fulfill its mandate can be compromised if it lacks the necessary financial wherewithal or is unable to earn a return sufficient to attract capital.

As documented earlier, the major rating agencies have warned of exposure to uncertainties associated with ongoing capital expenditure requirements,

[57] Application of Yankee Gas Services Company for a Rate Increase, DPUC Docket No. 04-06-01, Direct Testimony of George J. Eckenroth (Jul. 2, 2004) at Exhibit GJE-11.1. Updating the results presented by Mr. Eckenroth through April 2005 also resulted in an average flotation cost percentage of 3.6%.

uncertain economic and financial market conditions, future environmental compliance costs, and the potential for continued energy price volatility. As discussed earlier, APS faces a number of potential challenges that might require the relatively swift commitment of considerable capital resources in order to maintain the high level of service to which its customers have become accustomed. For example, mandated shutdowns of generating facilities in response to security threats or a catastrophic event elsewhere in the U.S. would impose significant reliance on wholesale power markets to meet energy shortfalls. Investors understand just how swiftly unforeseen circumstances can lead to deterioration in a utility's financial condition, and stakeholders have discovered first hand how difficult and complex it can be to remedy the situation after the fact.

While providing the infrastructure necessary to enhance the power system and meet the energy needs of customers is certainly desirable, it imposes additional financial responsibilities on APS. For a utility with an obligation to provide reliable service, investors' increased reticence to supply additional capital during times of crisis highlights the necessity of preserving the flexibility necessary to overcome periods of adverse capital market conditions. These considerations heighten the importance of allowing APS an adequate return on the fair value of its investment.

Q. **WHAT ROLE DOES REGULATION PLAY IN ENSURING ACCESS TO CAPITAL FOR APS?**

A. Considering investors' heightened awareness of the risks associated with the utility industry and the damage that results when a utility's financial flexibility is compromised, the continuation of supportive regulation remains crucial to the

Company's access to capital. Investors recognize that regulation has its own risks, and that constructive regulation is a key ingredient in supporting utility credit ratings and financial integrity, particularly during times of adverse conditions.

Fitch concluded, "[G]iven the lingering rate of unemployment and voter concerns about the economy, there could well be pockets of adverse rate decisions, and those companies with little financial cushion could suffer adverse effects."[58] S&P has also emphasized the need for regulatory support, concluding, "the quality of regulation is at the forefront of our analysis of utility creditworthiness."[59] Similarly, Moody's concluded:

> For the longer term, however, we are becoming increasingly concerned about possible changes to our fundamental assumptions about regulatory risk, particularly the prospect of a more adversarial political (and therefore regulatory) environment. A prolonged recessionary climate with high unemployment, or an intense period of inflation, could make cost recovery more uncertain.[60]

With respect to APS specifically, the investment community has noted ongoing challenges posed by regulatory uncertainty.[61] Of particular concern to investors is the impact of regulatory lag and cost-recovery on the APS's ability to earn its authorized ROE and maintain its financial metrics, with Fitch noting:

> In Fitch's opinion, the regulatory compact in Arizona will continue to be the key determinant of APS's creditworthiness. Implementation of effective regulatory policies to ameliorate regulatory lag and provide APS a reasonable opportunity to earn

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[58] Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2010 Outlook," *Global Power North America Special Report* (Dec. 4, 2009).

[59] Standard & Poor's Corporation, "Assessing U.S. Utility Regulatory Environments," *RatingsDirect* (Nov. 7, 2008).

[60] Moody's Investors Service, "U.S. Regulated Electric Utilities, Six-Month Update," *Industry Outlook* (July 2009).

[61] *See e.g.*, Moody's Investors Service, "Credit Opinion: Arizona Public Service Company," *Global Credit Research* (Feb. 25, 2011).

its authorized ROE will be critical to the utility's future credit ratings.[62]

Q. WHAT ARE THE IMPLICATIONS OF THE COMPANY'S RELATIVE CREDIT STANDING?

A. In a recent report by S&P ranking U.S. regulated utilities from strongest to weakest, APS was ranked 150 out of the total 185 companies with investment grade credit ratings.[63] During the financial crisis Fitch observed that, "'flight to quality' is selective within the [utility] sector, favoring companies at higher rating levels."[64] Because of the weaker overall credit standing associated with APS, there is little backstop in the event of a crisis and reduced flexibility to respond to other challenges, such as increased capital outlays or renewed energy market volatility.

The negative impact of declining credit quality on a utility's capital costs and financial flexibility becomes more pronounced as debt ratings move down the scale from investment to non-investment grade. In light of APS's present ratings, an inadequate rate of return imposed in this proceeding would further pressure APS's financial flexibility and credit standing. Strengthening financial integrity is imperative to ensure the capability to maintain existing ratings while confronting potential challenges.

Q. DO CUSTOMERS BENEFIT BY ENHANCING THE UTILITY'S FINANCIAL FLEXIBILITY?

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[62] Fitch Ratings Ltd., "Arizona Public Service Company," *Global Power U.S. & Canada Full Ratings Report* (Jun. 11, 2010).

[63] Standard & Poor's Corporation, "Issuer Ranking: U.S. Regulated Electric Utilities, Strongest To Weakest," *RatingsDirect* (Apr. 7, 2011).

[64] Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22, 2008).

A. Yes. While providing a return on fair value that is sufficient to maintain APS's ability to attract capital, even under duress, is consistent with the economic requirements embodied in the U.S. Supreme Court's *Bluefield* decision, it is also in customers' best interests.[65] Ultimately, it is customers and the service area economy that enjoy the benefits that come from ensuring that the utility has the financial wherewithal to take whatever actions are required to ensure a reliable energy supply. By the same token, customers also bear a significant burden when the ability of the utility to attract capital is impaired and service quality is compromised.

B. Capital Structure

Q. IS AN EVALUATION OF THE CAPITAL STRUCTURE MAINTAINED BY A UTILITY RELEVANT IN ASSESSING ITS RETURN ON EQUITY?

A. Yes. Other things equal, a higher debt ratio, or lower common equity ratio, translates into increased financial risk for all investors. A greater amount of debt means more investors have a senior claim on available cash flow, thereby reducing the certainty that each will receive their contractual payments. This increases the risks to which lenders are exposed, and they require correspondingly higher rates of interest. From common shareholders' standpoint, a higher debt ratio means that there are proportionately more investors ahead of them, thereby increasing the uncertainty as to the amount of cash flow, if any, that will remain.

Q. WHAT COMMON EQUITY RATIO IS IMPLICIT IN APS'S REQUESTED CAPITAL STRUCTURE?

A. APS's capital structure is presented in the testimony of Witness Jim Hatfield. As

[65] The end result requirement of the *Hope* case was affirmed in the *Duquesne* case cited earlier and in the more recent *Verizon Comm. Et al v. FCC*, 535 U.S. 467 (2002).

summarized in his testimony, the common equity ratio used to compute APS's overall rate of return was approximately 54 percent in this filing.

Q. WHAT WAS THE AVERAGE BOOK VALUE CAPITALIZATION MAINTAINED BY THE UTILITY PROXY GROUP?

A. As shown on Attachment WEA-8, common equity ratios at December 31, 2010 ranged from 25.3 percent to 63.8 percent and averaged 45.5 percent for the firms in the Utility Proxy Group.

Q. WHAT OTHER BENCHMARKS ARE RELEVANT IN ASSESSING APS'S CAPITAL STRUCTURE UNDER THE FAIR VALUE RATE BASE STANDARD?

A. To be able to raise capital, companies must pay returns that are competitive at the current market prices of their securities, not the embedded book value of the mix of stocks and bonds. Reference to market values is also consistent with the underlying premise of the fair value rate base standard.[66] As a result, the market value capitalizations for the firms in the Utility Proxy Group also serve as a benchmark in evaluating APS's proposed capital structure.

As shown on Attachment WEA-9, at year-end 2010, the market value capitalizations for the firms in the Utility Proxy Group implied an average common equity ratio of 53.8 percent.

Q. WHAT CAPITALIZATION IS REPRESENTATIVE FOR THE UTILITY PROXY GROUP GOING FORWARD?

A. As shown on Attachment WEA-8, Value Line expects that the average book value common equity ratio for the Utility Proxy Group of 48.5 percent over its

[66] The U.S. Supreme Court in *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989) noted that the purpose of fair value ratemaking is to provide a fair return on the market value of plant. Using a market value capital structure would seem to be more consistent with this objective than original cost given that Arizona is a fair value jurisdiction.

three-to-five year forecast horizon. On a market value basis, the average capitalization for this group of electric utilities implies an average common equity ratio of 54.1 percent (Attachment WEA-9).

Q. WHAT CAPITALIZATION RATIOS ARE MAINTAINED BY OTHER ELECTRIC UTILITY OPERATING COMPANIES?

A. Attachment WEA-10 displays capital structure data at year-end 2010 for the group of electric utility operating companies owned by the firms in the Utility Proxy Group. As shown there, common equity ratios for the electric utility operating companies corresponding to the Utility Proxy Group ranged from 26.5 percent to 62.9 percent and averaged 51.5 percent.

Q. WHAT IMPLICATION DOES THE INCREASING RISK OF THE INDUSTRY HAVE FOR THE CAPITAL STRUCTURES MAINTAINED BY UTILITIES?

A. As discussed earlier, utilities are facing energy market volatility, rising cost structures, the need to finance significant capital investment plans, uncertainties over accommodating economic and financial market uncertainties, and ongoing regulatory risks. Taken together, these considerations warrant a stronger balance sheet to deal with an increasingly uncertain environment. A more conservative financial profile, in the form of a higher common equity ratio, is consistent with increasing uncertainties and the need to maintain the continuous access to capital that is required to fund operations and necessary system investment, including times of adverse capital market conditions.

Moody's has repeatedly warned investors of the risks associated with debt leverage and fixed obligations and advised utilities not to squander the opportunity to strengthen the balance sheet as a buffer against future uncertainties.[67] More recently, Moody's concluded:

> From a credit perspective, we believe a strong balance sheet coupled with abundant sources of liquidity represents one of the best defenses against business and operating risk and potential negative ratings actions.[68]

Similarly, S&P noted that, "we generally consider a debt to capital level of 50% or greater to be aggressive or highly leveraged for utilities."[69] Fitch affirmed that it expects regulated utilities "to extend their conservative balance sheet stance in 2010," and employ "a judicious mix of debt and equity to finance high levels of planned investments."[70]

Q. WHAT OTHER FACTORS DO INVESTORS CONSIDER IN THEIR ASSESSMENT OF A COMPANY'S CAPITAL STRUCTURE?

A. Depending on their specific attributes, contractual agreements or other obligations that require the utility to make specified payments may be treated as debt in evaluating the Company's financial risk. For example, power purchase agreements ("PPA") typically obligate the utility to make specified minimum contractual payments. As a result, when a utility enters into a PPA, the fixed charges associated with the contract increase the utility's financial risk in the same way that long-term debt and other financial obligations increase financial leverage. Because investors consider the debt impact of such fixed obligations

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[67] Moody's Investors Service, "Storm Clouds Gathering on the Horizon for the North American Electric Utility Sector," *Special Comment* (Aug. 2007); "U.S. Electric Utility Sector," *Industry Outlook* (Jan. 2008).

[68] Moody's Investors Service, "U.S. Electric Utilities Face Challenges Beyond Near-Term," *Industry Outlook* (Jan. 2010).

[69] Standard & Poor's Corporation, "Ratings Roundup: U.S. Electric Utility Sector Maintained Strong Credit Quality In A Gloomy 2009," *RatingsDirect* (Jan. 26, 2010).

[70] Fitch Ratings Ltd., "U.S. Utilities, Power, and Gas 2010 Outlook," *Global Power North America Special Report* (Dec. 4, 2009).

in assessing a utility's financial position, they imply greater risk and reduced financial flexibility. In order to offset the resulting debt equivalent, the utility must rebalance its capital structure by increasing its common equity in order to restore its effective capitalization ratios to previous levels. These commitments have been repeatedly cited by major bond rating agencies in connection with assessments of utility financial risks.[71]

As discussed earlier, a significant portion of the Company's power requirements are currently obtained through long-term purchased power contracts. These contractual payment obligations, along with the sale-leaseback agreements associated with Unit 2 of Palo Verde, are fixed commitments with debt-like characteristics and are properly considered when evaluating the financial risks implied by APS's capital structure. S&P reported that it adjusts Pinnacle West's capitalization to include $1.1 billion in imputed debt from off-balance sheet obligations associated with lease agreements, post-retirement benefit obligations, and PPAs.[72] Unless the Company takes action to offset this additional financial risk by maintaining a higher equity ratio, the resulting leverage will weaken APS's creditworthiness, implying a higher required rate of return to compensate investors for the greater risks.

Q. WHAT DOES THIS EVIDENCE SUGGEST WITH RESPECT TO APS'S PROPOSED CAPITAL STRUCTURE?

A. Based on my evaluation, I concluded that a capital structure consisting of approximately 54 percent common equity represents a reasonable mix of capital sources from which to calculate APS's overall rate of return. The Company's

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[71] See, *e.g.*, Standard & Poor's Corporation, "Implications Of Operating Leases On Analysis Of U.S. Electric Utilities," *RatingsDirect* (Jan. 15, 2008)

[72] Standard & Poor's Corporation, "Arizona Public Service Co.," *RatingsDirect* (Apr. 27, 2010).

requested common equity ratio of approximately 54 percent is entirely consistent with the range of book value capitalizations for the proxy companies and other electric operating companies, and is essentially identical to the average market value capital structure for the Utility Proxy Group based on year-end 2010 data and Value Line's near-term projections. Because the purpose of fair value ratemaking is to provide a reasonable return on the value of the utility's rate base, reference to market values is relevant in evaluating APS's capital structure.

While industry averages provide one benchmark for comparison, each firm must select its capitalization based on the risks and prospects it faces, as well its specific needs to access the capital markets. A public utility with an obligation to serve must maintain ready access to capital so that it can meet the service requirements of its customers. The need for access becomes even more important when the company has capital requirements over a period of years, and financing must be continuously available, even during unfavorable capital market conditions.

The Company's proposed capital structure is consistent with industry benchmarks and reflects APS's ongoing efforts to maintain its credit standing and support access to capital on reasonable terms. The reasonableness of APS's requested capital structure is reinforced by the ongoing uncertainties associated with the electric power industry, the need to accommodate the additional exposures associated with the Company's resource mix, and the importance of supporting continued investment in system improvements, even during times of adverse industry or market conditions. S&P noted that the Company's credit rating could decline if APS "is unable to maintain or improve its capital structure,"[73] while Moody's cited the need for a reduction in financial leverage to stabilize APS's credit standing.[74]

C. Implications of Attrition

Q. WHAT CAUSES ATTRITION?

A. Attrition is the deterioration of actual return below the allowed return that occurs when the relationships between revenues, costs, and rate base used to establish rates (e.g., using a historical test year) have changed by the time rates go into effect. For example, if external factors are driving costs to increase more than revenues, then the rate of return will fall short of the allowed return even if the utility is operating efficiently. Similarly, when growth in the utility's investment outstrips the rate base used in the test year, the earned rate of return will fall below the allowed return through no fault of the utility's management. These imbalances are exacerbated as the regulatory lag increases between the time when the data used to establish rates is measured and the date when the rates go into effect.

Q. WHY IS IT NECESSARY TO ADDRESS THE IMPACT OF ATTRITION?

A. Investors are concerned with what they can expect in the future, not what they might expect in theory if a historical test year were to repeat. To be fair to investors and to benefit customers, a regulated utility must have an <u>opportunity to actually earn</u> a return that will maintain financial integrity, facilitate capital attraction, and compensate for risk. In other words, it is the end result in the future that determines whether or not the *Hope* and *Bluefield* standards are met.

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[73] Standard & Poor's Corporation, "Arizona Public Service Co.," *RatingsDirect* (Apr. 27, 2010).
[74] Moody's Investors Service, "Credit Opinion: Arizona Public Service Company," *Credit Research* (Dec. 17, 2007).

Q. HAS THE INVESTMENT COMMUNITY RECOGNIZED THE RISKS ASSOCIATED WITH ATTRITION AND LAG IN ITS EVALUATION OF APS?

A. Yes. S&P noted that, "Regulatory lag, or the time that a company takes to pass on higher costs to customers, has typically been higher than sector averages, and is expected to persist because the company continues to require high levels of capital investment."[75] Similarly, Moody's noted, "APS's ability to earn reasonable returns has been limited due to significant regulatory lag," and concluded that the uncertain timing of rate case decisions by the ACC "causes APS to map to a factor in the Ba range for its Regulatory Framework."[76] Fitch has also cited the potential that regulatory lag could produce "significant deterioration" in credit metrics and result in rating downgrades.[77] More recently, Fitch concluded:

> Earnings attrition due to regulatory lag is a primary risk factor for APS investors. If left unaddressed, post-2011 earned returns could track significantly below authorized levels, resulting in weakening credit metrics and potential credit rating downgrades.[78]

Fitch observed that, "Implementation of effective regulatory policies to ameliorate regulatory lag and provide APS a reasonable opportunity to earn its authorized ROE will be critical to the utility's future credit ratings.[79]

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[75] Standard & Poor's Corporation, "Arizona Public Service Co.," *RatingsDirect* (Apr. 27, 2010).
[76] Moody's Investors Service, "Credit Opinion: Arizona Public Service Company," *Global Credit Research* (Feb. 25, 2011).
[77] Fitch Ratings Ltd., "Arizona Public Service Company," *Global Power U.S. & Canada Credit Analysis* (Jan. 23, 2008).
[78] Fitch Ratings Ltd., "Arizona Public Service Company," *Global Power U.S. & Canada Credit Analysis* (Jun. 11, 2010).
[79] *Id.*

Similarly, the February 28, 2011 Benchmarking Study prepared by the Liberty Consulting Group concluded that APS's earned returns have fallen significantly below benchmark levels.[80] As the study concluded:

> The graph below shows APS [return on average equity] falling consistently well below the average returns of each of the base, expanded growth and nuclear comparative panels from 2002-2009.[81]

Q. WHAT ARE THE WAYS TO DEAL WITH ATTRITION?

A. For many utilities, the widespread adoption of pass-through clauses for fuel, purchased power, and other costs that were rising rapidly in the late 1970's and early 1980's has helped to partially offset the impact of attrition. The use of future test years and other forward-looking mechanisms is also useful in ameliorating the impact of attrition, as is accelerated depreciation and inclusion of CWIP in rate base, particularly where financing an expensive generating plant addition is undermining a utility's financial indicators. Many jurisdictions have developed methods to attenuate regulatory lag, such as allowing interim rates, putting rates into effect subject to refund, as well as accelerating the administrative process to allow faster rate decisions. As a result of these measures, combined with the fall-off of inflation, growth, and new construction across the electric utility industry, attrition ceased to be a major regulatory issue for most utilities by the mid-1980s.

Q. WOULD THE DECOUPLING MECHANISM PROPOSED BY APS HELP TO ATTENUATE ATTRITION?

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[80] Liberty Consulting Group, "Benchmarking Study of Arizona Public Service Company's Operations, Cost, and Financial Performance," Docket No. E-01345A-08-0172 (Feb. 28, 2011) at 41-42 ("Benchmarking Study").
[81] *Id.*

A. Yes. Decoupled rate structures are another tool to better match a utility's revenues with the underlying costs of providing service. By improving a utility's ability to recover its fixed costs between rate cases, mechanisms, such as the Efficiency and Infrastructure Account ("EIA") mechanism proposed by APS, help to reduce attrition by addressing the impact of at least one cause; namely, declining customer sales.

Q. IS IT REASONABLE TO CONSIDER ATTRITION IN ESTABLISHING RATES FOR APS?

A. Yes. Setting rates at a level that considers the impact of attrition and allows the utility an opportunity to actually earn its authorized ROE is consistent with fundamental regulatory principles. That end result would maintain the utility's financial integrity, ability to attract capital and offer investors fair compensation for the risk they bear. Given the past timing of rate relief and the dynamics faced by APS, there is every reason to believe that attrition would lead to under-earning the allowed ROE if the impact of regulatory lag and rising costs and capital requirements is ignored.

Central to the determination of reasonable rates for utility service is the notion that owners of public utility properties are protected from confiscation. The Supreme Court has reaffirmed that the end result test must be applied to the actual returns that investors expect if they put their money at risk to finance utilities.[82] This end result can only be achieved for APS if the ROE is sufficient

[82] *Verizon Communications, et al v. Federal Communications Commission, et al*, 535 U.S. 467 (2002). While I cannot comment on the legal significance of this case, I found the economic wisdom of looking to the reasonable expectations of actual investors compelling. I understand that as a fair value state, Arizona law may have requirements beyond the *Hope* and *Bluefield* end-result tests. But economic logic and common sense confirm that a utility cannot attract capital on reasonable terms if investors expect future returns to fall short of those offered by comparable investments.

to offset the impact of attrition. Thus, whatever the Commission ultimately determines to be investors' required return, the only way to achieve that end result is to set the ROE at a level that is sufficient to give APS an opportunity to actually earn investors' required rate of return in the future.

Indeed, not allowing the Company an opportunity to earn a sufficient return is the economic equivalent of taking the capital value of existing investors.

Q. HOW DOES NOT ALLOWING APS AN ACTUAL OPPORTUNITY TO EARN ITS COST OF CAPITAL RESULT IN TAKING VALUE FROM APS INVESTORS?

A. In real world capital markets, investors have many competing places to put their money. If the money that is dedicated to utility public service does not have an opportunity to earn a return commensurate with that available from alternatives of equivalent risk in the capital markets, investors are not being adequately compensated for the use of their money and bearing risk. Since the capital dedicated to utility service cannot be withdrawn from public service, its economic value to investors is reduced by the amount necessary to make the utility investment competitive with alternative investments on the open market.[83] This reduction in economic value necessary to bring the rate of earnings on utility investment into line with market opportunities of commensurate risk constitutes a taking of investors' capital by the governmental authority setting rates.

[83] Individual owners of utility bonds and stocks can sell their claims on future cash flows to other investors, but they cannot withdraw the underlying capital from the utility. The government will not allow capital that is invested in utility rate base to be withdrawn. Therefore, the governmental authority having control over the rates must be set them as to allow that capital to earn of return that is competitive with the earnings available other opportunities of commensurate risk. Failing to allow such a return constitutes a taking of the economic value of the capital dedicated to public utility service.

We can observe how inadequate returns reduce economic value in the marketplace. Consider a bond issued by a risky entity. Generally the bond is sold to the public at close to face value ($1000) and can be traded in the market. Whoever owns the bond will receive the coupon payments over the life of the bond and receive the $1000 principal repayment at maturity. As the level of interest rates vary or the risk of the cash flow promises from the issuer of the bond change, so will the market value of the bond. If the risk increases that the promised payments will not be made in full, the value of the bond drops in the capital market. Only by lowering the price that investors must pay for the bond can the expected return be made competitive with other opportunities in the capital markets. If an investor owns the bond and does not sell it when the risk increases, the economic value of their investment is reduced as the market price declines.

Similarly, capital that is dedicated to public service in the rate base of APS has its value affected by the risks and prospects of APS relative to other opportunities in the capital market. Since the money invested in APS's fair value rate base cannot be withdrawn, the effect of not having an opportunity to earn returns commensurate with the underlying risk causes the economic value of its securities to fall. This reduction in value due to an inadequate opportunity to earn a return commensurate with risk is the economic equivalent of the government taking value from the private property of investors without compensation.

D. Impact of Adjustment Mechanisms

Q. HOW ARE FLUCTUATIONS IN ENERGY COSTS FOR APS ACCOMMODATED IN RATES?

A. Concerns over the risks associated with energy price volatility and rising costs have become increasingly pronounced in the industry. The Company's retail electric rates contain a fuel and purchased power adjustment clause ("PSA"), whereby increases and decreases in the cost of fuel for electric generation are reflected in the rates charged to retail electric customers. The ACC requires periodic filings and hearings to establish the amount of price adjustments under the PSA and also provides for deferral and subsequent recovery or refund of variances between the estimated cost of fuel and purchased power and the actual costs incurred. Under the existing PSA, APS defers 90 percent of the difference between retail fuel and purchased power costs and the Base Fuel Rate. As discussed earlier, the Company absorbs as much as 10 percent of the retail fuel and purchased power costs above the Base Fuel Rate and retains up to 10 percent of the benefit from the retail fuel and purchased power costs that are below the Base Fuel Rate. The PSA rate may not be increased or decreased more than $0.004 per kWh in a year without permission of the ACC.

As a result, while the PSA mechanism is supportive of APS's financial integrity, there can be a lag between the time the Company actually incurs power cost expenditures and when they are recovered from ratepayers. Thus, APS is not entirely shielded from the need to finance deferred power supply costs. Thus, while the PSA is a valuable means of mitigating the risks associated with energy cost volatility, they do not eliminate them.

Q. DOES APS OPERATE UNDER OTHER COST RECOVERY MECHANISMS?

A. Yes. The ACC has approved a recovery mechanism to track the costs that APS incurs in providing transmission services, as well as costs related to energy efficiency programs and renewable energy standards. APS is also proposing the implementation of a revenue decoupling mechanism, the EIA, and an Environmental and Reliability Account ("ERA") mechanism for environmental and generation capacity additions, which will provide APS a more timely recovery of the revenue requirement associated with qualified investments made by APS.

Q. WHAT WOULD BE THE EFFECT OF APS'S TWO NEW PROPOSED MECHANISMS FROM INVESTORS' PERSPECTIVE?

A. Revenue decoupling mechanisms address the investment community's heightened concerns over the risks associated with declining consumption by helping to preserve a utility's opportunity to collect the level of revenues per customer it was authorized when rates were established. APS's distributed generation, energy conservation and efficiency programs may be desirable, but as S&P noted, "policy objectives can sometimes increase utilities' uncertainty and credit risk."[84] S&P went on to conclude that, "efficiency programs that lack decoupling may carry a higher level of credit risk."[85] Because utility revenues and cash flow typically depend on sales volume, a utility will be unable to recover its fixed costs on a timely basis, if at all, to the degree that usage is declining. Regulatory mechanisms, such as the EIA proposed by APS, are essential to mitigate regulatory lag while ensuring that conservation efforts do not undermine the utility's financial integrity and credit standing.

Q. WOULD APPROVAL OF APS'S PROPOSED EIA AND ERA MECHANISMS IMPLY THAT ITS INVESTMENT RISKS ARE LOWER

[84] Standard & Poor's Corporation, "When Energy Efficiency Means Lower Electric Bills, How Do Utilities Cope?," *RatingsDirect* (Mar. 9, 2009).
[85] *Id.*

THAN FOR THE COMPANIES IN THE PROXY GROUPS USED IN YOUR QUANTITATIVE ANALYSES?

A. No. Adjustment clauses and cost trackers, along with rate design measures and other mechanisms designed to break the link between a utility's revenues from customer usage, have been increasingly prevalent in the utility industry in recent years. In response to the increasing risk sensitivity of investors to uncertainty over fluctuations in costs and regulatory lag, and in light of the importance of advancing other public interest goals such as energy conservation, utilities and their regulators have sought to mitigate some of the cost recovery uncertainty and align the interest of utilities and their customers in favor of reducing consumption through decoupling and other adjustment mechanisms. As Fitch observed:

> An emerging regulatory trend for integrated electric utilities is the initiation of electricity revenue decoupling in response to the recent softness of demand and state policies that include ambitious energy-efficiency targets.[86]

While not always directly analogous to the specific mechanisms approved or proposed for APS, the objective is similar; namely, to allow the utility an opportunity to earn a fair rate of return and mitigate exposure to attrition in an era of rising costs and declining consumption. Reflective of this industry trend, the companies in the Utility Proxy Group operate under a variety of cost adjustment mechanisms. As summarized on Attachment WEA-11, these mechanisms range from riders to recover bad debt expense and post-retirement

[86] Fitch Ratings Ltd., "U.S. Utilities, Power, and Gas 2010," *Global Power North America Special Report* (Dec. 4, 2009). Fitch observed that electric revenue decoupling had been initiated or was allowed in California, Ohio, Vermont, New York, and Maryland, with pilot programs in Wisconsin and Idaho, while 18 states have approved the implementation of revenue decoupling for gas utilities.

employee benefit costs to revenue decoupling and adjustment clauses designed to address the rising costs of environmental compliance measures.

For example, the utility operations of Constellation Energy, Inc. benefit from energy adjustment clauses and revenue decoupling, as well as trackers for costs associated with conservation and demand-side management programs. Similarly, Edison International Inc. and Pacific Gas and Electric Company also operate under numerous balancing account mechanisms that cover a significant portion of revenue requirements and effectively dampen the impact of fluctuations in electric sales on their ability to recover the costs of providing service. Similarly, the firms in the Non-Utility Proxy Group also have the ability to alter prices in response to rising production costs, with the added flexibility to withdraw from the market altogether.

Q. IS THERE A DOWNSIDE TO REVENUE DECOUPLING MECHANISMS FROM AN INVESTOR PERSPECTIVE?

A. Yes. The investment community does not view mechanisms to address revenue stabilization, such as weather mitigants or rate design mechanisms that shift away from volumetric recovery of fixed costs, as entirely positive. This is because, while such measures dampen the volatility of a utility's revenues, they also largely preclude the prospects of greater earnings due to higher consumption. This double-edged sword was noted by S&P in the context of weather adjustment clauses:

> Some LDCs are reluctant to pursue such provisions, because they don't want to forego the upside earnings potential of a significantly colder-than-normal winter.[87]

[87] Standard & Poor's Corporation, "Natural Gas Distribution," *Industry Surveys* at 18 (Nov. 29, 2001).

Similarly, Moody's warned that "it is unclear, at this time, as to whether these cost riders/trackers may prove to have hidden consequences over the long-term horizon."[88] Thus, investors would also consider the loss of upside potential in evaluating the impact of decoupling mechanisms.

Q. WHAT DOES THIS IMPLY WITH RESPECT TO YOUR EVALUATION OF A FAIR ROE FOR APS?

A. While the EIA and ERA mechanisms proposed for APS would be supportive of the Company's financial integrity and credit ratings, there is certainly no evidence to suggest that these provisions would justify any adjustment to the ROE range determined earlier. First, APS's investment risks are comparable to or greater than those of the proxy groups used to estimate the cost of equity. For example, the "BBB-" corporate credit rating assigned to APS indicates slightly *more* risk than the "BBB" average for the Utility Proxy Group.

As demonstrated above, utilities across the U.S. that APS competes with for new capital – including those in the Utility Proxy Group used to estimate the cost of equity – are increasingly availing themselves of similar adjustments. As a result, the impact of utilities' ability to mitigate the risk of declining revenues and cash flows is already reflected in the capital market estimates discussed earlier, and no separate adjustment to APS's ROE is necessary or warranted. While the adjustment mechanisms approved and proposed for APS address the built-in disincentives associated with increasing capital expenditures and fluctuating energy demand by attenuating exposure to declining revenues, this leveling of the playing field only serves to address factors that could otherwise impair APS's opportunity to collect its authorized revenues.

[88] Moody's Investors Service, "U.S. Investor-Owned Electric Utilities," *Industry Outlook* (January 2009).

E. Return on Equity Recommendation

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSES.

A. Reflecting the fact that investors' required return on equity is unobservable and no single method should be viewed in isolation, I used both the DCF and CAPM methods to estimate a fair ROE for APS. These methods were applied in a forward-looking manner to be consistent with the Arizona fair value rate base standard. In order to reflect the risks and prospects associated with APS's jurisdictional utility operations, my analyses focused on a proxy group of twenty-one other utilities with comparable investment risks. Consistent with the fair value rate base standard, and the fact that utilities must compete for capital with firms outside their own industry, I also referenced a proxy group of comparable risk companies in the non-utility sector of the economy.

My application of the constant growth DCF model considered four alternative growth measures based on projected earnings growth and the sustainable, "br+sv" for each firm in the respective proxy groups. In addition, I evaluated the reasonableness of the resulting DCF estimates and eliminated low- and high-end outliers that failed to meet threshold tests of economic logic. My CAPM analyses were based on forward-looking data that best reflects the underlying assumptions of this approach. The results of my alternative analyses are summarized in Table WEA-6, below: